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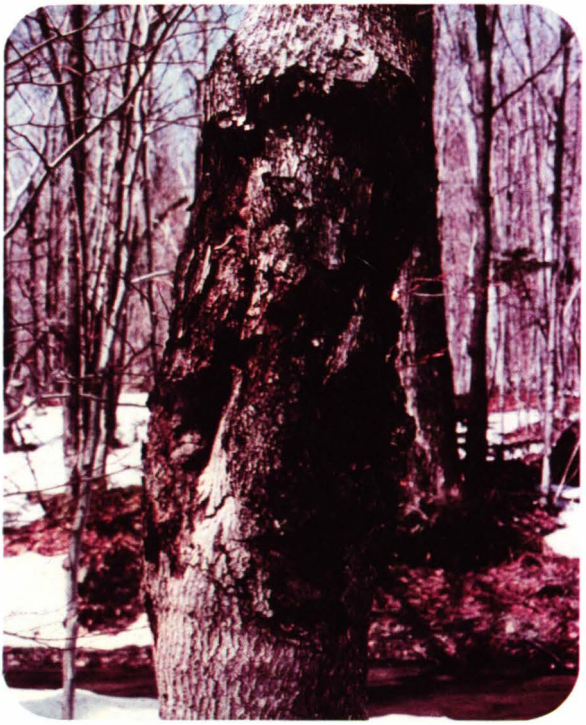
HOW TO

Identify and Minimize Damage Caused by Eutypella Canker of Maple



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Eutypella canker, caused by the fungus *Eutypella parasitica,* develops on several species of maple including red, Norway, silver, sycamore, black, and boxelder, but it is most common on sugar maple. This disease most frequently kills trees less than 7.5 cm (3 inches) in diameter. On larger maples, perennial cankers limit production of quality wood and increase the risk of wind breakage. Eutypella canker has been found throughout the northern range of sugar maple from Minnesota to Maine. Typically, 2 to 20 percent of sugar maple stems in a stand are cankered, but infection rates can reach up to 60 percent. Infection by wind-dispersed ascospores is thought to occur through openings in the bark associated with branch stubs, logging wounds, sunscald, or frost cracks.

IDENTIFICATION

In the Field

1. A typical canker has a sunken center surrounded by flared callus folds, resembling a cobra head (Figure 1). Bark remains attached to the cankered face. A branch stub is often seen at the center of a young canker (Figure 2). Cankers usually form within 4.5 meters (15 feet) of the ground on main stems.

2. White to buff mycelial fans form under the bark covering cankers and in callus folds (Figure 3).

3. Black fruiting bodies (perithecia) with long necks protrude from bark at the center of cankers 6 or more years old. Ascospores, produced within these structures, are thought to be the major source for new infections.

Figure 1. Flared callus folds of typical Eutypella canker.

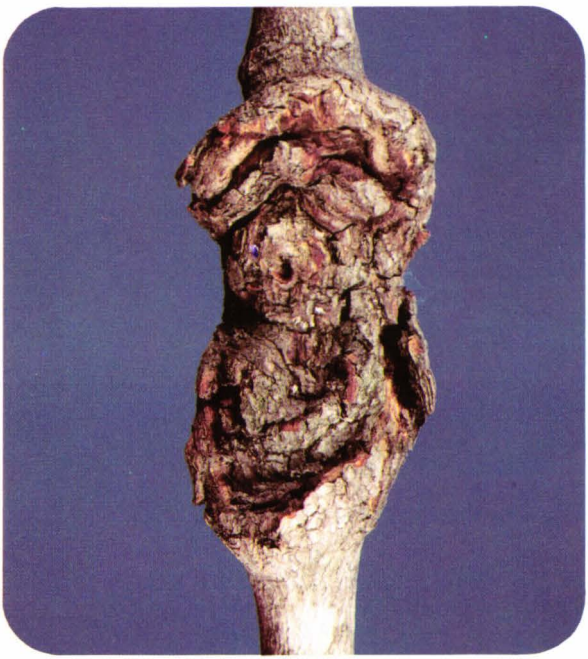

Figure 2. Young canker on sugar maple sap-

Figure 3. Bark at edge of canker removed to show mycelial fan.

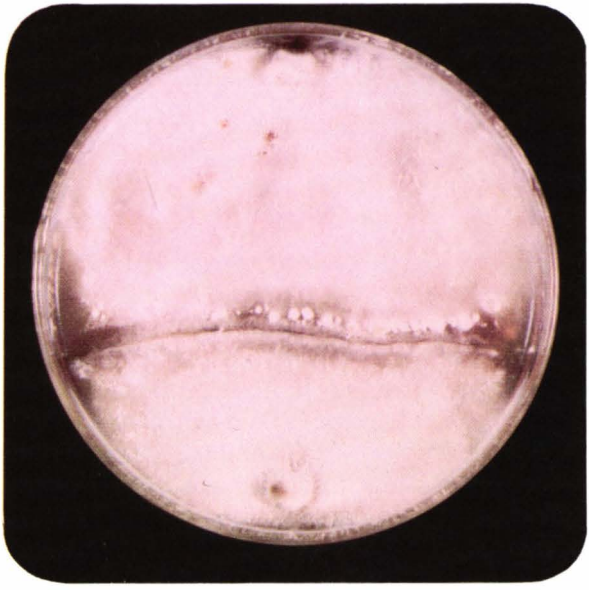

Figure 4. Two isolates of *Eutypella parasitica* on an agar plate.

In the Laboratory

To isolate the causal fungus from suspected Eutypella cankers, aseptically transfer chips of wood from canker margins or discolored wood beneath cankers or pieces of mycelial fans to any of the commonly used culture media, such as malt extract agar, and incubate at 28°C in the light. The mycelium of *Eutypella parasitica* in culture is white and dense (Figure 4). Characteristic one-celled spores (conidia) are long, slender, and strongly curved (1.3 to 1.8 by 25 to 32 μm) and form within the mycelium after 4 to 8 weeks incubation (Figure 5).

Figure 5. Conidia of *Eutypella parasitica* produced in culture.

CONTROL

Although there are no direct controls of Eutypella cankers on individual trees, the incidence of these cankers can be reduced by several silvicultural practices:

1. Cut cankered trees, and remove them if feasible, during stand treatments.

2. If removal is not possible, place cankers face down on the ground to reduce spore dispersal.

3. Protect trees from stem wounds.

For additional information see: FRENCH, W. J. 1969. Eutypella canker of *Acer* in New York. State Univ. Coll. For., Syracuse Univ., Syracuse, New York — Tech., Publ. 94. 56 p.; JOHNSON, D. W. and J. E. KUNTZ 1978. Imperfect stage of *Eutypella parasitica* in culture. Can. J. Bot. 56:1518-1525; and JOHNSON, D. W. and J. E. KUNTZ 1979. Eutypella canker of maple: Ascospore discharge and dissemination. Phytopathology 69:130-135.

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